REMARKS

This Amendment is filed in response to the Office Action mailed March 16, 2010. The Applicant respectfully requests reconsideration. All objections and rejections are respectfully traversed.

Claims 1-29 are now pending in the application.

Claims 1-4, 14, 15, 22, 23 and 27 have been amended.

New claim 29 has have been added.

Response to Examiner's Response to Arguments

At paragraph 2 of the Office Action, the Examiner provides a detailed response to the Applicant's previous arguments. The Applicant thanks the Examiner for this specific response as it has allowed the Applicant to better understand the Examiner's position. The Applicant would like to respond specifically in turn, in hopes agreement may be reached.

The Examiner suggests that "it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described in 802.1D in the GARP VLAN registration described in 802.1Q using one frame through compression and encapsulation as described in Collette … the compression of multiple frames into a single encapsulated frame renders it obvious … furthermore the person of ordinary skill in the art would have known of encoding methods such as Euclid's number base algorithm as disclosed in Huang to achieve the compression necessary to encapsulate …. VLAN attributes." *See* Office Action paragraph 2.

The Applicant respectfully urges that the Applicant's technique does not merely encapsulate several compressed frames (GVRP PDU messages) into one frame (one GVRP PDU message). Rather than merely encapsulate several other frames, the Applicant's technique changes the information contained in fields within a GVRP PDU message. Specifically, the Applicant computes a series of encoded values that each represent a plurality of attribute events for different VLANs (rather than representing an

attribute event for just one VLAN). The Applicant then loads each encoded value into a separate field within a GVRP PDU, such that each field within the GVRP PDU now stores information for a plurality of different VLANs (rather than for just one VLAN). The Applicant makes this clear in amended claim 1, which now recites "***compute encoded values, in accordance with a number base conversion encoding algorithm that encodes a plurality of attribute events that are each associated with a different VLAN of a given set of VLANs into each encoded value … loads each encoded value into a separate field within a single GVRP PDU message….***"

As discussed in more detail below, the combination of references does not suggest this aspect of the claims. And accordingly, the Applicant respectfully requests reconsideration.

Claim Rejections - 35 U.S.C. §101

At paragraph 3 of the Office Action, claim 23 was rejected under 35 U.S.C. §101. The Applicant has amended the claim in accord with the Examiner's suggestion and respectfully requests the rejection be withdrawn.

Claim Rejections - 35 U.S.C. §103

At paragraphs 4-6 of the Office Action, claims 1, 4, 14, 15, 19, 22 and 23 were rejected under 35 U.S.C. §103(a) over IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridge Local Area Networks, IEEE Std. 802.1Q, 1998 (hereinafter "802.1Q") in view of IEEE Standard Part 3: Media Access Control (MAC) Bridges, IEEE Std. 801.1D, 1998 (hereinafter "802.1D"), in further view of Collette et al., U.S. Publication No. 2003/0177243 (hereinafter "Collette").

Further, Huang, U.S. Patent No. 4,281,391 (hereinafter "Huang") is cited elsewhere in the Office Action and will also be discussed below.

The Applicant's amended claim 1, representative in part of the other rejected claims, sets forth (emphasis added):

1. An intermediate network device having a plurality of ports for sending and receiving network messages to and from entities of a computer network at least some of which are segregated into a plurality of virtual local area network (VLANs) defined within the computer network, the intermediate network device comprising:

a compact-Generic Application Registration Protocol (GARP) VLAN Registration Protocol (GVRP) application component associated with a selected port, the compact-GVRP application component having:

a GARP Information Declaration (GID) component configured to maintain VLAN registration state for the selected port in response to receiving attribute events for the VLANs;

a compact-GVRP encoder/decoder unit; and

a GVRP protocol data unit (PDU) message generator, wherein

the compact-GVRP encoder/decoder unit is configured to ***compute encoded values, in accordance with a number base conversion encoding algorithm that encodes a plurality of attribute events that are each associated with a different VLAN of a given set of VLANs into each encoded value***, and

the GVRP PDU message generator ***loads each encoded value into a separate field within a single GVRP PDU message***, wherein the encoded values computed for all of the VLANs defined within the computer network are loaded within the single GVRP PDU message for transmission from the selected port.

802.1Q describes a conventional form of GVRP where "GVRP allows both end stations and Bridges in a Bridged LAN to issue and revoke declarations relating to memberships of VLANs." *See* 802.1Q, Section 11.2.1. In order to exchange VLAN membership information, bridges and end station exchange GVRP PDU messages. In conventional GVRP PDU messages, a multiple-byte attribute structure is provided for each active VLAN to express the state that VLAN. **Specifically, for each active VLAN a separate multiple-byte attribute structure including a two octet (i.e., two byte) "Attribute Value" field is used**. *See* 802.1Q, Section 11.2.3.1.3.

802.1D discusses the conventional format of a GARP Protocol Data Unit (PDU). At Section 12.11.1.2, 802.1D states that a conventional GARP PDU includes "[a]n Attribute List consists of one or more *Attributes*…." *See also* 802.1D Fig. 12-6. 802.1D goes on to discuss that "[s]uccessive messages are packed into the GARP PDU, and

within each Message, successive **Attributes are packed into each Message, until the end of the PDU is encountered** or there is no more attributes to pack at that time." *See* 802.1D Section 12.11.3.1. "The PDU has exactly enough room for the first N Attributes that require to be transmitted at the time to be packed. In this case, the PDU is transmitted, and the next N Attributes are encoded in a subsequent PDU." *See* 802.1D Section 12.11.3.1.

Collette discusses a technique for "**batching multiple [Fiber Channel] frames together**, compressing the batched frames, and forming a single datagram … from the compressed frames." *See* Collette paragraphs 0012 and 0027(emphasis added). A "compression header 32" is appended to the compressed **batch of frames**…." *See* Collette paragraph 0035 and Fig. 5, 32 (emphasis added).

Huang describes that the "process of dividing by a number; subtracting the remainder from the original equation; and dividing this by the same number to form a new equation is known as Euclid's base conversion algorithm. A specialized version of this is commonly used to convert from decimal to binary." *See* Huang col. 34, lines 59-63.

The Applicant respectfully urges that 802.1Q, 802.1D, Collette and Huang do not suggest the Applicant's claimed "***compute encoded values, in accordance with a number base conversion encoding algorithm that encodes a plurality of attribute events that are each associated with a different VLAN of a given set of VLANs into each encoded value … loads each encoded value into a separate field within a single GVRP PDU message….***"

While the Applicant computes a series of encoded values that each represent a plurality of attribute events for different VLANs, and loads each encoded value into a separate field within a GVRP PDU, such that each field within the GVRP PDU now stores information for a plurality of different VLANs, 802.1Q and 802.1D teaches that a separate attribute structure should be used for each VLAN to express the state that particular VLAN, Collette merely discusses batching multiple Fiber Channel frames together, and Huang merely discusses use of "Euclid's base conversion algorithm" to

convert between bases. None of the references suggest changing the information contained in fields within a GVRP PDU message, by creating encoded values that each represent a plurality of attribute events for different VLANs (rather than representing an attribute event for just one VLAN) and then loading each encoded value into a separate field within a GVRP PDU, such that each field within the GVRP PDU now stores information for a plurality of different VLANs (rather than for just one VLAN).

More specifically, 802.1Q teaches that **a separate attribute structure should be used for each VLAN** to express the state that VLAN, wherein each attribute structure including, among other things, a two octet (i.e., two byte) "Attribute Value" field. *See* 802.1Q, Section 11.2.3.1.3.

Combination with 802.1D does not remedy the deficiencies of 802.1Q. Rather than compute a series of encoded values that each represent a plurality of attribute events for different VLANs, and load each encoded value into a separate field within a GVRP PDU, such that each field within the GVRP PDU now stores information for a plurality of different VLANs, 802.1D also envisions **separate attribute structures being used for each VLAN**, where these N separate attribute structures are packed one after the other inside PDUs. *See* 802.1D section 12.11.3.1

Further, combination Collette does not remedy the deficiencies of 802.1Q and 802.1D. Collette does not compute a series of encoded values that each represent a plurality of attribute events for different VLANs, and load each encoded value into a separate field within a GVRP PDU, such that each field within the GVRP PDU now stores information for a plurality of different VLANs. Collette simply discusses "**batching multiple [Fiber Channel] frames together**, compressing the batched frames, and forming a single datagram" from them. *See* Collette paragraphs 0012 and 0027(emphasis added). Rather than merely encapsulate compressed frames together, the Applicant's technique changes the information contained in fields within a GVRP PDU message. Collette makes no mention of causing information in a particular field to be changed to

represent a plurality of attribute events for different VLANs, rather than representing an attribute event for just one VLAN.

Still further, a potential combination with Huang does not remedy the deficiencies of 802.1Q, 802.1D, and Collette. While Huang discusses use of "Euclid's base conversion algorithm" to convert between bases, no suggestion is made that such an algorithm should be used to change the information contained in fields within a GVRP PDU message, so that information in a particular field is changed to represent a plurality of attribute events for different VLANs, rather than representing an attribute event for just one VLAN. Mere mention of a "base conversion algorithm" does not suggest such use of the algorithm.

Accordingly, the Applicant respectfully urges that the combination of 802.1Q, 802.1D, Collette and, potentially, Huang, is legally insufficient to make obvious the present claims under 35 U.S.C. §103(a) at least due to the claimed "***compute encoded values, in accordance with a number base conversion encoding algorithm that encodes a plurality of attribute events that are each associated with a different VLAN of a given set of VLANs into each encoded value … loads each encoded value into a separate field within a single GVRP PDU message….***"

At paragraph 7 of the Office Action, claims 2, 3 and 25-28 were rejected under 35 U.S.C. §103(a) over 802.1Q in view of 802.1D, in further view of Collette, in still further view of Huang.

At paragraph 8 of the Office Action, claim 5 was rejected under 35 U.S.C. §103(a) over 802.1Q in view of 802.1D, in further view of Collette, in still further view of Churchyard et al., U.S. Patent No. 7,089,302 (hereinafter "Churchyard").

At paragraph 9 of the Office Action, claims 6-8 and 10 were rejected under 35 U.S.C. §103(a) over 802.1Q in view of 802.1D, in further view of Collette, in still further view of Churchyard et al., in still further view of Rodeheffer et al., U.S. Publication No. 2005/0036500 (hereinafter "Rodeheffer").

At paragraph 10 of the Office Action, claims 9 and 18 were rejected under 35 U.S.C. §103(a) over 802.1Q in view of 802.1D, in further view of Collette, in still further view of Churchyard et al., in still further view of Rodeheffer, in still further view of Liu et al., U.S. Publication No. 2004/0061773 (hereinafter "Liu") and Uchida et al., U.S. Publication No. 2004/0076130 (hereinafter "Uchida").

At paragraph 11 of the Office Action, claims 11 and 12 were rejected under 35 U.S.C. §103(a) over 802.1Q in view of 802.1D, in further view of Collette, in still further view of Churchyard et al., in still further view of Rodeheffer, in still further view of Liu.

At paragraph 12 of the Office Action, claim 13 was rejected under 35 U.S.C. §103(a) over 802.1Q in view of 802.1D, in further view of Collette, in still further view of Davis et al, U.S. Publication Number 2003/0043806 (hereinafter "Davis") and "Charachorloo et al., U.S. Publication Number 2002/0087806 (hereinafter "Charachorloo").

At paragraph 13 of the Office Action, claims 16 and 17 were rejected under 35 U.S.C. §103(a) over 802.1Q in view of 802.1D, in further view of Collette, in still further view of Churchyard and Rodeheffer.

At paragraph 14 of the Office Action, claims 20 and 21 were rejected under 35 U.S.C. §103(a) over 802.1Q in view of 802.1D, in further view of Collette, in further view of Liu

The Applicant notes that claims 2, 3, 5-13 and 16-21 are dependent claims that depend from independent claims believed to be allowable for at least the reasons discussed above. Claims 2, 3, 5-13 and 16-21 are believed to be allowable due to their dependency, as well as for other separate reasons.

In the event that the Examiner deems personal contact desirable in disposition of this case, the Examiner is encouraged to call the undersigned attorney at (617) 951-2500.

In summary, all the independent claims are believed to be in condition for allowance and therefore all dependent claims that depend there from are believed to be in condition for allowance. The Applicant respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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